

State of Wisconsin/Department of Transportation
RESEARCH PROGRESS REPORT FOR THE QUARTER ENDING: Error! Bookmark not defined.

Program: SPR-0010(36) FFY99		Part: II Research and Development	
Project Title: Guidelines for Selection of PG Binders for Asphalt Mixes		Project ID: 0092-01-01	
Administrative Contact: Nina McLawhorn		Sponsor:	
WisDOT Technical Contact: Error! Bookmark not defined.		Approved Starting Date: Nov 15, 2000	
Approved by COR/Steering Committee: \$99,829.00		Approved Ending Date: May 15, 2003	
Project Investigator (agency & contact): Hussain Bahia: UW-Madison			

Description: This study will be conducted over 30 months, and will be completed in five (5) phases.

- Task 1:** Review National and Regional Guidelines
Task 2: Conduct Binder Evaluation Laboratory Study
Task 3: Establish Initial PG Binder Selection Guidelines for Wisconsin
Task 4: Development of Plans for Field Study
Task 5: Final Report

Background:

In January 1997, the Wisconsin Department of Transportation made the switch to use Performance graded (PG) binders in place of the penetration and viscosity graded asphalts that had been historically used. The decision at that time to specify PG58-28 as the standard grade for use was based on this materials similarity to the asphalts that we had previously used, the wide availability of the material in our region, and the fact that there was little or no difference in cost. This material has worked well for us, but we are starting to become aware of situations and locations where use of some of the other grades may be of benefit. We have placed limited amounts of other PG graded material in the state, but no coordinated effort has been made to track these projects. In order to determine guidelines for the selection of PG graded binders for use in Wisconsin, AASHTO MP1 should be implemented based on climatic data, pavement temperatures, application, material availability, risk to the Department, and economic factors.

Total study budget	Current FFY budget	Expenditures for current quarter	Total Expenditures to date
\$99,829.00	\$33,276.34	Error! Bookmark not defined.	\$56,670.91

Progress This Quarter:

(Includes project committee mtgs, work plan status, contract status, significant progress, etc.)

The work on the final report was continued and the final recommendation for binder fatigue criteria was completed based on extensive pavement analysis. The binders tested in the project were fitted in the different levels of traffic and pavement types. The following tables show a brief summary of the testing conditions and the fatigue criteria recommended.

At the conclusion of this analysis, the final report can be submitted to the TOC for review. No more analysis is needed unless the TOC request more evaluations.

Table 1: Testing Conditions for the Selected Structures and Temperatures

Testing Temperature [°C]	Input Energy for Testing [Pa]					
	Mayor Highway	Medium Highway	Minor Road	Mayor Urban	Medium Urban	Minor Urban
8	700	4000	13000	800	3000	10000
13	500	2500	6500	600	2000	5000

Table 2. Estimation of Np20 Requirements for the Traffic Levels Considered

Traffic Volume (million ESAL)	Minimum Np20
0 - 0.3	1500000
0.3 - 1.0	5000000
1.0 - 3.0	15000000
3.0 - 10	50000000
10.0 - 30.0	150000000
> 30.0	500000000

Work Next Quarter:

This project was expected to be finished by the end of this month. It is however unlikely that the TOC will have sufficient time to review and provide comments within the next few weeks. A no cost extension will be requested until end of year.

Circumstances affecting progress/budget:

The complexity of the analysis and the repetition required took a lot of time and resulted in delays that could not be avoided. The report is however complete and no further delays are expected.

Gantt Chart:

PROJECT I.D.	STARTING DATE	COMPLETION DATE		MONTH		REPORT #						PERCENT OF				
PROJECT # WISDOT	NOV 01, 2000	MARCH 31, 2003		J A N 2 2		9										
CONSULTANT FIRM NAME		% TIME ELAPSED			TOTAL PROJECT FUNDING			CONTRACT FUNDING				Project	Task Complete Last Report	Task Complete This Report	Project Complete	
UNIVERSITY OF WISCONSIN - MADISON		50.00%			100%			100%								
NAME OF STUDY																
GUIDELINES FOR PG BINDER SELECTION IN WISCONSIN																
TASK *		YEAR	20 00 2 0 0 1				2 0 0 2				20 03					
		MONTH	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 5	Qtr 6	Qtr 7	Qtr 8	Qtr 9	Qtr 10				
TASK 1 :													10	5	5	10
Review National and Regional Guidelines																
TASK 2 :													55	21	30	51
Conduct Binder Evaluation Laboratory Study																
TASK 3 :													10	5	4	9
Establish initial PG binder selection																
guidelines for Wisconsin																
INTERIM REPORT													5	0	5	5
TASK 4 :													10	0	0	0
Field Study																
TASK 5 :													10	0	5	5
Final Report																
SHOW PROGRESS BY USE OF A BAR CHART:		SCHEDULED											100			80
		COMPLETED														

Note: Gantt chart shown in State Fiscal Year Quarters